

IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF OHIO  
EASTERN DIVISION

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UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 4:17-cv-131
	)	
S.H. BELL COMPANY,	)	
	)	
Defendant.	)	
	)	

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**COMPLAINT**

The United States of America, by the authority of the Attorney General of the United States and through the undersigned attorneys, acting at the request of the Administrator of the United States Environmental Protection Agency (“U.S. EPA”), files this complaint and alleges as follows:

**NATURE OF ACTION**

1. This is a civil action brought against defendant S.H. Bell Company (“S.H. Bell”) concerning emissions of manganese (Mn) from its facility located in East Liverpool, Ohio and Ohioville Borough, Pennsylvania (the “East Liverpool Facility” or “Facility”) that present an imminent and substantial endangerment to public health or welfare. At certain concentrations, manganese is a neurotoxin and causes neuromotor and neuropsychological deficits, including tremors, balance issues, negative cognitive effects, and mood changes. East Liverpool residents have been identified with health ailments consistent with chronic manganese exposure. S.H. Bell handles and stores raw and processed metal products, including various manganese ores, at the

East Liverpool Facility. An air-monitoring station located 250 feet from the Facility has recorded the highest levels of ambient manganese concentrations in the United States. S.H. Bell's handling and processing of manganese at the East Liverpool Facility have contributed to manganese emissions adversely impacting individuals in East Liverpool.

2. The United States seeks injunctive relief under Sections 113(b) and 303 of the Clean Air Act ("CAA" or "the Act"), 42 U.S.C. §§ 7413(b) and 7603, and Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9606, restraining S.H. Bell from emitting manganese and/or requiring it to take immediate steps to significantly reduce air pollution that presents or may present an imminent and substantial endangerment to the public health or welfare, or the environment, including but not limited to the health and welfare of the residents of East Liverpool.

#### **JURISDICTION AND VENUE**

3. This Court has jurisdiction over the subject matter of this action pursuant to CAA Section 113(b), 42 U.S.C. § 7413(b), CERCLA Section 113(b) and (e), 42 U.S.C. § 9613(b) and (e), and 28 U.S.C. §§ 1331 and 1345.

4. Venue is proper in this District pursuant to CAA Section 113(b), 42 U.S.C. § 7413(b), CERCLA Section 113(b), 42 U.S.C. § 9613(b), and 28 U.S.C. § 1391(b) and (c), because S.H. Bell does business in this District, the releases of hazardous substances occurred in this District, and the emissions occurred in, and continue to threaten residents of, East Liverpool, which is also in this District.

## **NOTICE**

5. The United States has provided notice of the commencement of this action to the Ohio Environmental Protection Agency (“Ohio EPA”) and the Pennsylvania Department of Environmental Protection (“PADEP”) pursuant to CAA Section 113(b), 42. U.S.C. § 7413(b).

## **PARTIES**

6. Plaintiff, the United States of America, is acting by authority of the Attorney General of the United States and through the undersigned attorneys, on behalf of the Administrator of EPA. Authority to bring this action is vested in the Attorney General of the United States by Section 305 of the CAA, 42 U.S.C. § 7605; Section 106(a) of CERCLA, 42 U.S.C. § 9606(a); and pursuant to 28 U.S.C. §§ 516 and 519.

7. S.H. Bell is a privately owned corporation that is incorporated under the laws of the Commonwealth of Pennsylvania and headquartered in Pittsburgh, Pennsylvania.

## **FACTUAL BACKGROUND**

### **S.H. Bell’s East Liverpool Facility is a Source of Manganese Emissions**

8. Since 1969, S.H. Bell has owned and operated the East Liverpool Facility, located at 2217 Michigan Avenue, East Liverpool, Ohio. The East Liverpool Facility site covers approximately 92 acres along the Ohio River. Approximately one half of the site is located in the State of Ohio and one half in the Commonwealth of Pennsylvania.

9. The East Liverpool Facility is equipped to process, dry, crush, screen, and package materials for industrial customers. In addition to other ores and minerals, S.H. Bell receives and processes manganese ore, electrolytic manganese, ferromanganese, and silicomanganese (collectively, “manganese”) from various sources at the Facility. Manganese is

a naturally occurring substance found in many types of rocks and soil. It is used in steel production, among other things, to improve steel qualities.

10. Manganese arrives at the Facility by river barge, railcar, or truck and is unloaded at S.H. Bell's barge unloading dock, railcar unloading area, or truck load out sheds. S.H. Bell's storing, processing, and/or handling of manganese at the East Liverpool Facility results in airborne emissions of particulate matter containing manganese. S.H. Bell owns and operates manganese emission sources at the Facility including, but not limited to, the barge unloading dock, the truck load out sheds, a KUX crusher, and storage piles.

11. The East Liverpool Facility has the potential to emit over 7.2 tons of manganese per year. Manganese particles released at the Facility are blown beyond the Facility's property line and into the ambient air of East Liverpool, Ohio, to the southwest, and Glasgow Borough, Pennsylvania, to the northeast, depending on prevailing wind conditions.

12. East Liverpool has an approximate population of 11,000 people, of which approximately 25% are children under the age of 18. Approximately 1,300 people live within one mile of the Facility, some within 250 feet of the Facility property line.

13. Glasgow (a.k.a. Smith's Ferry) has an approximate population of 60 people, including children. Glasgow is separated from the East Liverpool Facility by Little Beaver Creek, with homes located approximately 500 feet from the eastern boundary of the Facility.

**ATSDR Has Concluded that Manganese from the East Liverpool Facility Constitutes a Public Health Hazard**

**ATSDR Determination of Public Health Hazard**

14. The Agency for Toxic Substances and Disease Registry ("ATSDR") has issued a Health Consultation and letter addendum concluding that manganese exposures to East Liverpool residents constitute a "public health hazard" that "should be mitigated as soon as

possible to reduce harmful exposures.” ATSDR is a federal public health agency of the U.S. Department of Health and Human Services. ATSDR serves the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.

15. In November 2010, at the request of Ohio EPA, ATSDR performed a Health Consultation that concluded, among other things, that “exposure to manganese concentrations in this community [East Liverpool] poses a public health hazard because the highest measured concentrations approach the low end of manganese air concentrations that have been associated with neurological impacts in occupational studies.”

16. Subsequent to issuance of the Health Consultation, Ohio EPA required S.H. Bell to take certain steps to abate manganese emissions from the East Liverpool Facility. While manganese levels monitored at the near-by Michigan Avenue Water Plant (“Water Plant”) initially dropped, those levels rose significantly in 2014-2015.

17. In 2016, U.S. EPA asked ATSDR whether current concentrations of manganese being measured in the ambient air in East Liverpool are a threat to human health. ATSDR performed an updated evaluation and on September 22, 2016 concluded: “The exposures in this [East Liverpool] community represent a public health hazard and should be mitigated as soon as possible to reduce harmful exposures. Enforcement agencies should immediately act to identify the processes on site [East Liverpool Facility] that are releasing manganese to the air, and work with SH Bell to implement time critical strategies to reduce airborne Mn releases into the community.”

### **Health Risks from Manganese Exposure**

18. Manganese is a neurotoxin at certain concentrations that can cause neuromotor and neuropsychological deficits. Inhaled manganese may be transported to the brain before it is metabolized by the liver. Exposure to elevated concentrations of manganese in the air may lead to a permanent neurological disorder known as manganism, the symptoms of which include tremors, difficulty walking, facial muscle spasms, negative cognitive effects, and mood changes. It may also lead to lung inflammation and impaired lung function. In children, exposure to elevated levels of manganese may result in effects on brain development, including changes in behavior and decreases in learning and memory capacities.

19. ATSDR generates toxicological profiles for various hazardous substances, including manganese. The toxicological profile succinctly characterizes the toxicology and adverse health effects information for the hazardous substance. Each peer-reviewed profile identifies and reviews the key literature that describes a hazardous substance's toxicological properties.

20. In 2012, ATSDR issued an updated toxicological profile for manganese. The toxicological profile identified a minimal risk level ("MRL") for exposure to manganese through chronic-duration inhalation (greater than or equal to 365 days). An MRL is the daily human exposure to a substance that is likely to be without an appreciable risk of adverse effects. The MRL for chronic inhalation of manganese is 0.3 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).

21. Similarly, U.S. EPA has developed inhalational Reference Concentrations ("RfC"), which estimate the concentrations of a pollutant an individual could be exposed to for a lifetime without experiencing adverse health effects. The RfC for manganese is  $0.05 \mu\text{g}/\text{m}^3$ .

22. The MRL and RfC values are based on the respirable fraction of manganese-containing particulate matter (less than 10 microns in aerodynamic diameter or PM<sub>10</sub>), as these are the small particles that can pass deep into the lung and, thus, into the bloodstream and on to the brain. The respirable fraction of manganese particles in the ambient air is an indicator of the levels of manganese being inhaled by people in the community.

23. The respirable fraction of manganese is one part comprising the amount of Total Suspended Particulate (“TSP”) manganese measured by an ambient air monitor. The range of the respirable fraction of S.H. Bell’s manganese emissions is 20-35% of the TSP manganese identified at the Water Plant monitor in East Liverpool. The remaining portion of the TSP manganese is comprised of non-respirable particles; larger particles intercepted in upper airways before passing deep into the lung.

24. Non-respirable manganese particles may also have a deleterious effect on human health. Manganese may be inhaled and transmitted directly to the brain via the nasal passage and to the olfactory bulb or trigeminal nerve.

**Residents of East Liverpool Have Been Exposed to Manganese at Potentially Hazardous Levels**

25. Since 1999, Ohio EPA has conducted fixed-site air monitoring at three locations in East Liverpool: Maryland Avenue; the Port Authority; and the Water Plant. More recently, ambient air manganese measurements have also been conducted in Glasgow, Pennsylvania. Of the three East Liverpool monitoring stations, the Water Plant station consistently records the highest levels of manganese.

26. For example, the highest daily concentration of TSP manganese measured near the Facility is 32 µg/m<sup>3</sup> in September 2014 at the Water Plant station; the monthly average of TSP manganese at the Water Plant station in October 2015 is 5.67 µg/m<sup>3</sup>; and the average

monthly data for the Water Plant station TSP manganese measurements for the period from January 2015 through July 2016 is 1.74  $\mu\text{g}/\text{m}^3$ . The respirable portion of the average monthly data for the Water Plant station TSP manganese measurements during that period is estimated between 0.348  $\mu\text{g}/\text{m}^3$  (at 20% TSP) and 0.609  $\mu\text{g}/\text{m}^3$  (at 35% TSP) and exceeds the 0.3  $\mu\text{g}/\text{m}^3$  MRL for respirable manganese.

27. Beginning in 2011, U.S. EPA researchers, in conjunction with ATSDR, conducted a health study (neurological and neuropsychological) of East Liverpool adults subject to long-term residential airborne manganese exposure. (<https://www.epa.gov/healthresearch/air-manganese-study>). The researchers conducted blood testing, neurological assessments, and neurological tests of long-term adult residents in East Liverpool. Using air monitoring data for ambient air manganese concentrations, they performed air dispersion modeling of manganese levels for the area, and estimated ambient air manganese levels outside of the homes of study participants.

28. The researchers evaluated whether chronic exposure to airborne manganese is associated with adverse neurological health effects (*i.e.* manganese neurotoxicity) in adult residents of East Liverpool. As discussed in a series of peer-reviewed papers published in 2015 and 2016, the study team found that higher concentrations of air manganese exposure is associated with certain adverse neurological effects, including lower neuropsychological test scores and is negatively correlated with motor function and tremor.

**The East Liverpool Facility Contributes to Airborne Manganese Exposures in East Liverpool**

29. Manganese at the East Liverpool Facility is released into the air from the materials and products stored, processed, and/or handled at the Facility.

30. Air monitors closest to the East Liverpool Facility are most impacted by manganese emissions. The Water Plant station, located only 250 feet southwest of the East Liverpool Facility, is located in closest proximity to the East Liverpool Facility. The Water Plant station recorded the highest levels of manganese during the study period (2005-2016). The Glasgow station, located east of the East Liverpool Facility, is the second closest in proximity to the East Liverpool Facility and recorded the second highest levels of manganese during the portion of the study period when it was operational. High concentrations at the Water Plant and Glasgow monitoring stations temporally correlate with wind direction to the west and east, respectively.

31. Manganese collected at the Water Plant monitoring station has been subjected to morphological analysis to assist in determining its source. Such analysis studies the form and specific structural features of the particle, including analyzing aspects of the outward appearance (*i.e.* shape, structure, color, size). Morphological analysis can determine whether a particle was emitted from a high temperature process or whether it was released when crushed.

32. The morphologies of manganese-bearing particles captured at the Water Plant monitoring station were consistent with particles originating from a grinding process and not from a high-temperature process. The East Liverpool Facility is the sole location processing manganese ore in East Liverpool, with the nearest similar facility located approximately 3.5 miles away.

33. Manganese concentrations recorded at the East Liverpool monitoring locations indicate that manganese is present in ambient air in the greatest quantity during weekdays, when S.H. Bell is operational. Weekend concentrations are markedly lower at all three East Liverpool monitoring stations.

**FIRST CLAIM FOR RELIEF**  
**(Injunctive Relief under Clean Air Act Section 303, 42 U.S.C. § 7603)**

34. Paragraphs 1 through 33 are realleged and incorporated herein by reference.

35. Congress enacted the Clean Air Act “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” 42 U.S.C. § 7401(b)(1).

36. Section 303 of the Clean Air Act (“Emergency Powers”), 42 U.S.C. § 7603, provides:

Notwithstanding any other provision of this chapter, the Administrator, upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to public health or welfare, or the environment, may bring suit on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary.

37. CAA Section 302(g) defines an “air pollutant” as “any air pollution agent or combination of such agents, including any . . . substance or matter which is emitted into or otherwise enters ambient air.” 42 U.S.C. § 7602(g).

38. CAA Section 302(e) defines “persons” to include individuals, corporations, partnerships and associations. 42 U.S.C. § 7602(e).

39. CAA Section 113(b), 42 U.S.C. § 7413(b), authorizes EPA to commence a civil action for a permanent or temporary injunction, or to assess and recover a civil penalty, for,

among other things, any violation of CAA Section 303, 42 U.S.C. § 7603. 42 U.S.C. § 7413(b)(2).

40. At all times relevant to the Complaint, S.H. Bell has been a corporate entity and therefore a “person” within the meaning of CAA Section 302(e), 42 U.S.C. § 7602(e).

41. At all times relevant to the Complaint, the East Liverpool Facility has been a “pollution source” within the meaning of CAA Section 303, 42 U.S.C. § 7603.

42. At all times relevant to the Complaint, manganese has been an “air pollutant” within the meaning of CAA Section 302(g), 42 U.S.C. § 7602(g), and a “hazardous air pollutant” within the meaning of CAA Section 112, 42 U.S.C. § 7412.

43. At times relevant to this Complaint, S.H. Bell has caused and/or contributed and continues to cause and/or contribute to the concentrations of manganese in the air in and around East Liverpool, Ohio.

44. Based on the information described in Paragraphs 8-33, U.S. EPA has received evidence that the concentrations of manganese in the air in and around East Liverpool present an imminent and substantial endangerment to public health or welfare and the environment, including but not limited to the neurological health of the residents of East Liverpool, Ohio.

45. Pursuant to CAA Section 303, 42 U.S.C. § 7603, U.S. EPA has consulted with State and local authorities and attempted to confirm the accuracy of the information on which this enforcement action is based.

**SECOND CLAIM FOR RELIEF**  
**(Injunctive Relief under CERCLA Section 106, 42 U.S.C. § 9606)**

46. Paragraphs 1 through 33 are realleged and incorporated herein by reference.

47. At all times relevant to this Complaint, S.H. Bell has been a “person” within the meaning of CERCLA Section 101(21), 42 U.S.C. § 9601(21).

48. S.H. Bell is a current and/or past “owner” and/or “operator” within the meaning of CERCLA Sections 101(20) and 107(a), 42 U.S.C. §§ 9601(20) and 9607(a), of the Facility.

49. The East Liverpool Facility is a “facility” within the meaning of CERCLA Sections 101(9), 106(a), and 107(a), 42 U.S.C. §§ 9601(9), 9606(a), and 9607(a).

50. At times relevant to this action, there have been “releases” and “threatened releases” of a “hazardous substance” from the Facility owned and/or operated by S.H. Bell, into the environment, within the meaning of CERCLA Sections 101(8), 101(14), 101(22), 106(a), and 107(a), 42 U.S.C. §§ 9601(8), 9601(14), 9601(22), 9606(a), and 9607(a). More specifically, there have been “releases” and “threatened releases” of manganese, a “hazardous substance” within the meaning of CERCLA Sections 101(14), 106(a), and 107(a), 42 U.S.C. §§ 9601(14), 9606(a), and 9607(a), from the Facility into the environment.

51. There is or may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of manganese, a hazardous substance, from the Facility.

52. Actions are needed to abate the danger or threat presented by the release and/or threatened release of hazardous substances from the Facility into the environment.

53. Pursuant to CERCLA Section 106(a), 42 U.S.C. § 9606(a), the Defendant is subject to injunctive relief to abate the danger or threat presented by releases or threatened releases of hazardous substances from the Facility.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff the United States of America respectfully requests that the Court provide the following relief:

1. Order S.H. Bell to take all measures necessary to eliminate the imminent and substantial endangerment posed by manganese emissions emanating from the East Liverpool Facility;
2. Order S.H. Bell to install air monitoring stations at its northern, southern, eastern, and western property line and continuously record concentrations of respirable manganese in ambient air;
3. Order S.H. Bell to take all measures necessary to ensure that concentrations of respirable manganese recorded at the monitoring stations identified in the preceding Paragraph do not exceed the ATSDR MRL of 0.3  $\mu\text{g}/\text{m}^3$  on a rolling 12-month average; and
4. Award Plaintiff such other and further relief that the Court deems just and proper.

Respectfully submitted,

FOR THE UNITED STATES OF AMERICA

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